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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			MANOJARAN, MUTHUSWAMY GANAPATHY	
			ART UNIT	PAPER NUMBER
			2617	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/595,246

**Applicant(s)**

MALOMSOKY ET AL.

**Examiner**MUTHUSWAMY G.  
MANOHARAN**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-20 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-20 and 22-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/10/2010 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3, 5, 11, 22-23 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631).**

Regarding **claim 1**, Daniel teaches a method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of (Figure 2 and abstract):

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network(gathered data upward to the resource management unit and the resource management unit process the raw data, P[0047]); building a traffic and session database by parsing through the traces in order to extract and correlate ("The resource management unit processes the raw data statistics", P[0047]; Figure 3, item 203) each and every user session and user transaction which happened during the measurement period (the flow management level manages the individual flows on route to the subscribers, P[0056]);

defining a set of key performance indicators be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters; and calculating the defined key performance indicators("quality of service statistics", Paragraph [0047]).

Daniel did not teach specifically the method of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database. Snyder However, Snyder teaches in an analogous art a method of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database (abstract; "monitoring transactions", Paragraph [0039-0041])). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein the information about each and every user session and user transaction which happened during the measurement period calculating the performance indicators is carried out by selecting an appropriate

subset of the transactions in the traffic database in order to identify network engineering problems and provide traffic shaping of the data traffic on the network.

Regarding **claim 2**, Daniel teaches the method of claim, wherein the cellular mobile packet data network is a GPRS network (GPRS mobile networks, P[0093]).

Regarding **claim 3**, Daniel teaches the method of claim, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb trace (item 136 in Figure 2, Paragraph [0044]).

Regarding **claim 5**, Daniel teaches the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb and a Gn trace (item 136 in Figure 2 is a Gb trace and item 134 in Figure 2 is a Gb trace, P[0044, 0047]).

Regarding **claim 11**, Daniel teaches the method, wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring WAP object download delay in a specified cell (Abstract).

Regarding **claim 22**, Snyder, the step of calculating the performance indicators is carried out by calculating the key performance indicator value by summing the given Quality of Service measure of the selected individual transactions (abstract, Paragraph [0039]).

Regarding **claim 23**, Snyder teaches the step of calculating the performance indicators is carried out by calculating the key performance indicator value by averaging the given Quality of Service measure of the selected individual transactions (Paragraph [0040]).

**Claim 28, 30** are rejected for the same reason as set forth in claim 1.

Regarding **claim 29**, Daniel teaches the system of claim 28, in which monitor node comprising a traffic and session database which correlates traffic and mobility information extracted from passively captured traces collected from standardized interfaces (item 136 and item 134 in Figure 2).

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Bovo et al. (hereinafter Bovo) (US 2003/0148755).**

Regarding **claim 4**, the combination of Daniel, and Snyder did not teach specifically the method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb Gr trace. However, Bovo teaches in an analogous art the method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gr trace (Paragraph [0018]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gr trace in order to manage subscriber activities.

**Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Satt et al. (hereinafter Satt) (US 2004/0248583).**

Regarding **claim 6**, the combination of Daniel and Snyder did not teach specifically the method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace. However, Satt teaches in an analogous art, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace (Paragraph [0068]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use a method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace in order to provide traffic shaping of the data traffic on the network.

Regarding **claim 7**, Daniel teaches in an analogous art step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to an International Mobile Subscriber identity (IMSI) numbers list (P[0093-0094]). Satt further teaches the method, wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to an encrypted Gb, Gi, RADIUS trace (Satt: Paragraph [0068]).

Regarding **claim 8**, Daniel teaches the wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gn trace (item 134 in Figure 2). The combination of Daniel and Snyder did not teach specifically wherein the step of capturing raw traffic traces over standardized

interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace. However, Satt teaches in an analogous art the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace (Paragraph [0068]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the wherein the step of capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network relates to a Gb, a Gi and a Remote Authentication Dial-in User Service (RADIUS) trace in order to provide traffic shaping of the data traffic on the network.

**Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631), Komandur et al. (hereinafter Komandur) (US 7327708).**

Regarding **claim 10**, the combination of Daniel and Snyder teaches all the particulars of the claim except the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring MMS large message download/send rate in a specified cell. However, Komandur teaches in an analogous art, the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring MMS large message download/send rate in a specified cell (abstract, col. 5, lines 11-34, "network performance monitoring information for multimedia services", col. 9, lines 28-35). Therefore, it would be obvious



to one of ordinary skill in the art at the time of invention to use the method wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring MMS large message download/send rate in a specified cell in order to control the media delivery on the network.

**Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Jiang et al. (hereinafter Jiang)(US 2002/0044527).**

Regarding **claim 12**, the combination Daniel and Snyder teaches all the particulars of the claim except wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web small object download time in a specified cell, where the size of a small object is 9-11 kbyte. However, Jiang teaches in an analogous art the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web small object download time in a specified cell, where the size of a small object is 9-11 kbyte (Paragraph [0033]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web small object download time in a specified cell, where the size of a small object is 9-11 kbyte in order to estimate the performance for channel usage.

**Claim 15** is rejected for the same reason as set forth in claim 12. The applicant is providing additional use for the limitation so that one can estimate the performance for the POP3, mail down loads.

**Claim 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Chamaytelli et al. (hereinafter Chamytelli) (SU 2002/0194325).**

Regarding **claim 13**, the combination of Daniel and Snyder teaches all the particulars of the claim except the method, wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web large object download rate in a specified cell, where the size of a large object is larger than 50 kbyte. However, Chamaytelli teaches in an analogous art the method, wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web large object download rate in a specified cell, where the size of a large object is larger than 50 kbyte (Paragraph [0041], Figure 5a,5b). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein the method, wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring Web large object download rate in a specified cell, where the size of a large object is larger than 50 kbyte in order to estimate the performance for channel usage.

**Claims 14 and 16** are rejected for the same reason as set forth in claim 13. The applicant is providing additional use for the limitation so that one can estimate the performance for the POP3, mail down loads.

**Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Sen et al. (hereinafter Sen) (US 6208620).**

Regarding **claim 17**, the combination Daniel and Snyder teaches all the particulars of the claim except the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring end-to-end achievable throughput in a specified cell. However, Sen teaches in an analogous art, the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring end-to-end achievable throughput in a specified cell (col. 2, lines 9-15). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method wherein the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring end-to-end achievable throughput in a specified cell in order to improve the TCP performance.

Regarding **claim 18**, Sen teaches the method, wherein the calculation of key performance indicator measuring end-to-end achievable throughput in a specified cell comprises the steps of: calculating total inbound traffic of the user, including other transactions, between the first data packet of the particular TCP connection and the acknowledgement of the last data packet of the particular TCP connection: dividing the total inbound traffic (byte count) by the time elapsed between the first and last inbound data packet (col. 2, lines 9-15; col. 2, lines 51-56).

**Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Johnson et al (hereinafter Johnson) (US 2003/0237016).**

Regarding **claim 19**, the combination of Daniel and Snyder teaches all the particulars of the claim except the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring the rate of TCP connections and stalled periods in a specified cell. However, Johnson teaches in an analogous art, the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring the rate of TCP connections and stalled periods in a specified cell (paragraph [0033]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring the rate of TCP connections and stalled periods in a specified cell in order to improve the TCP performance.

**Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Yokoyama (US 2004/0243715).**

Regarding **claim 20**, the combination of Daniel and Snyder teaches all the particulars of the claim except the step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring the user-perceived throughput history in a specified cell. However, Yokoyama teaches in an analogous art, the step of defining a set of appropriate key performance indicators comprises a key

performance indicator measuring the user-perceived throughput history in a specified cell (Paragraph [0128]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use step of defining a set of appropriate key performance indicators comprises a key performance indicator measuring the user-perceived throughput history in a specified cell in order to improve the TCP performance.

**Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Lau et al. (hereinafter Lau) (US 7466652).**

Regarding **claim 24**, Snyder teaches the step of calculating the performance indicators contains the steps of reading the next transaction record from the traffic and session database; calculating the quantity defined by the KPI for the particular transaction; adding the value to an aggregation counter, and increasing the counter calculating the number of eligible transactions for the KPI; returning to the beginning until all the transactions are processed; calculating the KPI value by dividing the value of the aggregation counter with count of the eligible transactions (Figure 4, Paragraphs [0039-0041]).

The combinations of Daniel and Snyder did not teach specifically checking whether this transaction is of the type, which the KPI is about; checking whether the transaction happened in the cell specified for the KPI. However, Lau teaches in an analogous art a step of checking whether this transaction is of the type, which the KPI is about; checking whether the transaction happened in the cell specified for the KPI ("traffic optimization procedures on a cell by cell basis"; Abstract; traffic call, col. 9,

lines 40-60). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use a step of checking whether this transaction is of the type, which the KPI is about; checking whether the transaction happened in the cell specified for the KPI in order to fine-grained quality of service in a mobile service environment.

Regarding **claim 25**, Lau teaches the method of claim 24, wherein the step of checking whether this transaction is of the type, which the KPI is about is carried out by using the flow type field of the transaction record (col. 9, lines 40-60)

Regarding **claim 26**, Lau teaches the method of claim 24, wherein the step of checking whether the transaction happened in the cell specified for the KPI is carried out by using the Cell Id field of the transaction record (abstract).

Regarding **claim 27**, Daniel teaches the method of claim 24, wherein the step of calculating the quantity defined by the KPI for the particular transaction uses the information elements of duration, timestamp of the first data packet, timestamp of the last data packet, packet count and loss count fields of the transaction record (Figure 4B, P[0101]).

**Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 2004/0033806) in view over Snyder et al. (hereinafter) (US 2003/0134631) and Nelson (US 7280803).**

Regarding **claim 31**, Daniel teaches a method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being

linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of (Figure 2 and abstract):

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network(gathered data upward to the resource management unit and the resource management unit process the raw data, P[0047]); building a traffic and session database by parsing through the traces in order to extract and correlate all the information which is needed to the database("The resource management unit processes the raw data statistics", P[0047]); plurality of user transactions which happened during the measurement period and each user transaction is associated with a specific subscriber using captured session (the flow management level manages the individual flows on route to the subscribers, P[0056]);

defining a set of key performance indicators be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters; and calculating the defined key performance indicators("quality of service statistics", Paragraph [0047]).

Daniel did not teach specifically information the step of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database. However, Snyder teaches in an analogous art, the step of calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database (paragraph [0039]). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method the step of calculating the performance indicators is carried out by selecting an

appropriate subset of the transactions in the traffic database in order to provide traffic shaping of the data traffic on the network.

The combination of Daniel and Snyder did not teach specifically a method wherein each user transaction is associated with a specific subscriber using captured session management signaling and each user transaction is associated with a cell location using captured mobility management signaling. However, Nelson teaches in an analogous art wherein each user transaction is associated with a specific subscriber using captured session management signaling and each user transaction is associated with a cell location using captured mobility management signaling (abstract).

Therefore, it would be obvious of ordinary skill in the art at the time of invention to use a method each user transaction is associated with a specific subscriber using captured session management signaling and each user transaction is associated with a cell location using captured mobility management signaling in order to locate where the problem in coverage is occurring.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***



Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUTHUSWAMY G. MANOHARAN whose telephone number is (571)272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617